

June 29, 1990

DISTRIBUTION LIST #1
IOL'S RESPONSE TO ENVIRONMENT CANADA'S
"A FRAMEWORK FOR DISCUSSION ON THE ENVIRONMENT --
THE GREEN PLAN: A NATIONAL CHALLENGE"

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Attachments:

- 1) R.B. Peterson's letter dated June 29, 1990, to the Hon. Robert de Cotret, Minister of the Environment.
- 2) IOL's "Green Plan" response document.

Note: A wider distribution list and a foreword, which will form part of IOL's response document, will be developed next week.

June 29, 1990

R.B. Peterson

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R.B. Peterson
President and
Chief Operating Officer

June 29, 1990

The Hon. Robert de Cotret, P.C., M.P.
Minister of the Environment
Room 333, West Block
House of Commons
Ottawa, Ontario K1A 0A6

Dear Minister:

I am pleased to enclose two documents representing Imperial Oil's formal response to this stage of consultations on the "Green Plan"; namely, a Response to "A Framework for Discussion on the Environment" and a Discussion Paper on Potential Global Warming. We believe these will contribute to the current national discussion on development of a new environmental policy framework for Canada, and we urge you to examine our ideas.

We have also been involved directly as a company, as well as through industry associations, in the recent consultative sessions held across Canada. Our judgment is that the process was effective in bridging the many interests of governments, business, environmental interest groups, academia and the public in a cooperative effort to find workable solutions to environmental problems. The challenge will be to assimilate the many helpful suggestions that have been offered, and we look forward to the results of this process in the wrap-up sessions planned at the end of the summer.

A key theme in our submissions is the need to balance environmental and economic priorities. We believe that a strong economy provides the means to achieve environmental quality. In addition, the globalization of trade and commerce requires that we increase the international competitiveness of our economy at the same time as we tackle environmental issues that increasingly have international dimensions. A constructive outcome for global environmental quality will require international cooperation rather than unilateral actions by individual countries.

Our submissions also outline work we have underway to further contribute to the development of Canada's new environmental policy framework. This includes a seven-point work program relating to potential global warming and discussion papers on air quality and economic instruments to achieve environmental goals.

Upon completion of this work later this year, we will be pleased to discuss the results with you and your officials.

Yours very truly,

R.B. Peterson

Enclosures

Imperial Oil



Imperial Oil

Page

I. Introduction 1

II. Guiding Principles 4

III. Environmental Challenges 23

A. Air Quality 23

1. Ground-level Ozone and Urban Smog 23

2. Toxicity of Transportation Fuels 24

B. Water 24

C. Waste 25

D. Potential 25

IV. Instruments of Change 26

V. Recommendations and Commitments 28

**"A Framework for Discussion
on the Environment
The Green Plan:
A National Challenge"**

JUNE 1990

TABLE OF CONTENTS

	<u>Page</u>
I. Introduction	1
II. Guiding Principles	4
III. Environmental Challenges	10
A. Air Quality	10
1. Ground-level Ozone and Urban Smog	11
2. Toxicity of Transportation Fuels	13
B. Water	14
C. Waste	15
D. Potential Climate Change	17
IV. Instruments of Change	18
V. Recommendations and Commitments	22

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INTRODUCTION

Imperial Oil Limited ("Imperial") welcomes the opportunity to respond to the federal government's "A Framework for Discussion on the Environment -- The Green Plan: A National Challenge". As a leading industrial company in Canada and as a major producer of fossil fuels, petroleum products and petrochemicals, we have an important stake and a keen interest in participating fully in the development of public policy concerning environmental issues. To this end, we are responding to those parts of the Green Plan where we believe we can make the most meaningful contribution to the discussion.

Our comments are focussed on the environmental policy development process and the guiding principles and other considerations we believe are critical to its success. These provided the context for Imperial's recent Discussion Paper on Potential Global Warming (March 1990), which is also being tabled as a contribution to this consultative process. The paper describes a seven-point work plan now underway in Imperial, the results of which will be communicated widely later this year.

We have since commissioned other work to develop an integrated perspective on air quality issues in Canada and to define further contributions Imperial can make on these issues. To complement these efforts, we are also developing a companion discussion paper on the use of economic instruments to achieve environmental goals. We believe these discussion papers -- which

we plan to complete by year end -- will make a valuable contribution toward finding effective solutions to Canada's environmental challenges.

In designing a new environmental policy framework for Canada, we believe it is important to reflect on where we have been and where we are heading in terms of environmental quality.

Looking back, we need to acknowledge that considerable progress has been made on many fronts in improving the environmental quality of the air, water and land in Canada. This is important to recognize because we are doing some things right and these need to be continued. Progress has come as a result of a number of factors. Advances in measurement techniques and science and technology have enabled improved understanding of environmental problems and have guided solutions. We have increasingly recognized the interrelationship of the environment and the economy, and this has been reinforced by the report of the World Commission on Environment and Development (the Brundtland Commission) in 1987 and by recent events in Eastern Europe. There has been increased cooperation, consultation and commitment by many sectors of Canadian society to achieve realistic environmental goals. There is a wider recognition that many environmental issues have international dimensions. In terms of the economy, we have seen the benefits of reduced intervention into the workings of market forces.

As we look ahead, we are perhaps at a new crossroads. Environmental issues are becoming more complex and potentially more costly. Societal expectations and standards are becoming more demanding and our success in achieving these may be harder to measure. Looking farther out, world population growth may loom as the toughest environmental issue.

In the face of such challenges, we believe it is critically important to ground Canada's new environmental policy framework on a set of guiding principles that reflect lessons learned from the past and a sense for these emerging realities. In this regard, the federal government may wish to consider the following guiding principles which have helped Imperial to shape and focus its ideas.

GUIDING PRINCIPLES

1. "Strike the balance between environmental and economic priorities."

A strong economy provides the means to achieve environmental quality. The sooner this reality becomes a part of the way we Canadians think about our country and its resources, the more likely we will be able to find a workable balance between our economic and environmental priorities. Reasonable people can find such a balance. It will mean incorporating into the equation the full costs of environmental degradation and the real cost of environmental protection. This will require a strong commitment by many government departments to work together as well as to work closely with industry, special interest groups, economists, the scientific community and the public to achieve mutually agreed-upon environmental and economic goals.

Canadians also need to better understand the full impact upon our economy of increasingly competitive worldwide trade and commerce and the imperative for Canada to compete effectively. We are at a point in history where there is an increasing trend for political and economic forces and policy actions to be global and integrated. This means we need to understand our strengths and weaknesses as a trading nation and the unique contribution we make to the worldwide

economy and factor these considerations into negotiations on international environmental protocols.

Canada is to a large extent a country of commodity producers whose prosperity flows from a resource-driven, energy-intensive industrial economy that relies heavily on international trade. We need, therefore, to avoid taking unilateral Canadian action on global environmental problems that are significantly out of step with other trading nations. This kind of leadership would be costly and ineffective if it resulted in industries simply redirecting their operations to other countries.

2. "Search out the best thinking of all stakeholders."

A consultative process that effectively draws out the viewpoints and expertise of a wide variety of interested individuals and groups across the country is vital to the process of developing effective public policy. It is the role of government to facilitate the consultative process, to set national priorities and goals, and to participate effectively in international negotiations. We believe that business has an essential role both in helping to shape these goals as well as in the development of policy options that achieve the desired results in the most effective and efficient manner. Our responsibility, therefore, is to ensure the best available information, knowledge,

experience, and scientific and business perspectives are shared with government and other participants.

3. "Enroll those closest to the problem to help find solutions."

Fully informed, knowledgeable participants can help governments to shape the kind of public policy that evokes effective action from all sectors of the economy and from each of us as individuals. At Imperial we are dedicated to being a premier corporation in Canada, as reflected in everything we do. And that includes our commitment to contribute to solutions for the many environmental challenges we face as Canadians.

Many of these challenges span the globe, and truly know no boundaries. Imperial Oil has a role to play, not only as a socially responsible citizen of the world but also as a good Canadian corporate citizen, because we recognize that our operations can potentially have adverse effects on the environment.

Without doubt, the most valuable contribution we and our colleagues in industry can make is to ensure that environmental protection remains a top priority in all our business operations. We continue to participate in the development of the science and implementation of new technologies to minimize the effect of our operations and

products on the environment. Comprehensive standards, operating practices and managing systems are in place, and are being continuously improved, to safeguard the air, the water and the land we use in the production and distribution of our products. This is our commitment to the public.

We also believe we can contribute knowledge and expertise to the development of balanced and effective public policy to meet a wide range of environmental challenges by continuing to work with industry, governments, business, scientists, public interest groups and the communities in which we operate.

4. "Apply sound science to define problems and guide solutions."

Scientific knowledge is an essential foundation to ensure that the right actions are taken to protect the environment and that these actions are effectively applied. This means developing data and risk assessments that have integrity, in order to foster informed, intelligent debate.

Industry has a major role to play in improving scientific understanding. For example, at Imperial, we have undertaken a seven-point work program to find more answers based on

sound science and comprehensive cost and benefit analyses related to the issue of potential global warming.

Because Imperial Oil can only do so much with its own research and technical personnel to contribute to the comprehensive scientific inquiry needed to enhance the environmental knowledge base, we see another important role for us: namely, to provide financial support to encourage and nurture an expanding niche of environmental research in this country.

5. "Utilize market forces to evoke the creative talents of the private sector."

Imperial endorses the principle of using economic instruments, wherever possible, to harness market forces to help achieve environmental goals. It is our belief that this approach will unleash the full power of innovation, imagination and economic drives of the market. This will lead to solutions that, in most cases, will be more efficient and effective than the traditional "command and control" approach.

As an example, other jurisdictions, such as the United States have experience in the use of emissions rights trading arrangements, which could be invaluable to the development of similar public policy in Canada. Now is the

time to apply innovative approaches to meet ever-more challenging environmental needs.

At the individual level, it is our view that there are many opportunities to tap the imagination and enroll the participation of Canadian consumers. The tremendous success of "blue box" recycling of household waste is one splendid example. Funding for education and awareness programs is vital to the task of informing many publics.

6. "Harmonize environmental legislation across the country to foster efficient and effective action."

Let's not "out-green" each other. There is a need to enhance current intergovernmental partnerships to eliminate and prevent duplication and to ensure that the environmental policy framework and operational mechanisms are efficient and effective. Jurisdictional disputes spawn uncertainty and lack of purpose and interfere with getting the job done.

ENVIRONMENTAL CHALLENGES

Following are four environmental challenges of particular concern to Imperial and to which we can make the most meaningful contribution in terms of the policy development process. Our comments are focused on issues and considerations that we believe are important in developing public policy to meet these challenges.

A. AIR QUALITY

Canadians should be encouraged that considerable improvement has been achieved in air quality as measured by Environment Canada and provincial environmental agencies.

However, many challenges remain and a number of initiatives are underway. Those that relate most directly to our business include: the elimination of lead and the reduction of particulates from transportation fuels; reductions in emissions of nitrogen oxides (NOx) and volatile organic compounds (VOCs) to minimize lower atmosphere ozone formation; elimination of chlorofluorocarbons (CFCs) and halons to minimize upper atmosphere ozone depletion; and, reductions of sulphur dioxide and nitrogen oxides to control acid rain. New initiatives are also being contemplated worldwide to reduce greenhouse gas emissions that could lead to climate change. The approaches used by government to develop goals and timetables and to achieve results vary widely in each of these areas.

In our view, Canada could benefit from a more fully integrated, coordinated and prioritized approach to these air quality and climate change issues because there are strong interrelationships and interdependencies. Many of these issues have international dimensions where an understanding of the whole has important implications in dealing with the parts in terms of setting priorities, negotiating protocols, making commitments and establishing action plans.

For its part, Imperial is developing a comprehensive discussion paper on air quality issues in Canada, for completion by the end of 1990. Our objective is to develop an integrated perspective that is important to how we manage our business and which we also believe will make a valuable contribution to public policy development.

Turning to transportation fuels, we have a number of observations:

1. Ground-level Ozone and Urban Smog

Ozone is a key contributor to urban smog and is produced by a reaction that occurs at warm temperatures between VOCs and NOx in the presence of sunlight. Ozone has been shown to cause respiratory ailments and agricultural damage, and steps to reduce ozone have already been taken.

Engine exhaust standards for hydrocarbons and nitrogen oxides have been tightened, gasoline vapour pressures have been reduced and "stage one" controls (which capture and recycle hydrocarbon vapours when gasoline storage tanks are filled throughout the distribution system) are being introduced.

Further steps to reduce NOx and VOCs emissions are embodied in draft legislation. These incremental reductions and the means being contemplated come at increasingly higher costs to Canadians. We believe these goals must be supported by sound science to increase our understanding of how ozone is formed and dissipated and its impact on health and agriculture. In addition, the action steps must be based on solid cost and benefit analyses; in particular, the merits of focussing on the regions in Canada where ozone concentrations are the highest, rather than targeting the same controls right across the country. Together these efforts will help ensure that increasingly ambitious goals and associated means to reduce ground-level ozone concentrations are supportable and effective.

Another important issue is particulates in diesel exhaust emissions which may contain harmful constituents. Targets are being examined for the sulphur and aromatic content of diesel fuels to reduce these particulate emissions. Many scientific gaps remain in terms of the impacts of these emissions on human health. Also the mechanism of their

formation in diesel engines as a function of fuel composition and engine design are not well understood. We believe that priority needs to be placed on improving the understanding of these health and technical considerations prior to setting targets for fuel composition. In this regard, we strongly support Environment Canada and Health and Welfare Canada efforts to assess the toxicological characteristics of a number of substances on the "Priority Substances List" under the Canadian Environmental Protection Act (CEPA). These substances to be tested include some components of diesel exhaust emissions. It may well be that this program is on the critical path in developing supportable targets for diesel fuel composition and this warrants attention.

2. Toxicity of Transportation Fuels

Gasolines sold in Canada will be lead-free before the federal government's deadline of December 1, 1990. With that issue behind us, attention is now turning to other components of gasoline such as benzene, other aromatics and fuel additives such as manganese and potassium.

We believe that a critical assessment of health-risk exposure for various fuels, including alternative fuels such as methanol blends, and their trace exhaust components should be conducted before significant changes to fuel composition are legislated on the basis of potential health

impacts. Some of these considerations will be covered by the planned assessments associated with the "Priority Substances Lists" under CEPA, but others are not (e.g. formaldehyde) and this issue needs to be addressed.

B. WATER

Imperial Oil agrees with the "Green Plan" statements regarding overall concerns with water quality, the improvement options included, the legislative measures mentioned and the encouragement of environmentally sound water management through the use of economic instruments.

Another concept that is receiving increasing attention and possible legislative action is "zero discharge". It remains a controversial concept and we believe that in the absence of a proper definition of "zero discharge", public expectations may be raised unduly, which will cause serious misunderstandings between government, industry and society in general.

While not unique to water quality, the problem centres on the constantly increasing capability of analytical chemists to identify and quantify smaller and smaller concentrations of trace substances. The parts per million capability of yesterday gives way to the parts per billion of today and the parts per trillion and quadrillion of tomorrow. What was considered a "zero discharge" yesterday is a cause for concern today. These

constantly diminishing levels tend to be adopted as water quality limits, partly due to the difficulty of determining what, from scientific study, are the real toxic limits of the trace substances. Considering that the cost to remove lower and lower concentrations of contaminants from water can rise exponentially with decreases in concentration of the substance removed, it is extremely important to ensure that specific environmental and health needs and toxic effects are factored into the process of setting effluent quality limits for trace contaminants.

In this context, all of those interested and involved need to have the opportunity to be part of the debate on determining the real meaning and applicability of the concept of "zero discharge".

C. WASTE

Imperial concurs with the "Green Plan" recommendation that ways be explored to contribute to a 50 percent reduction in waste. We are uncertain as to the practicability of setting 50 percent as a specific target, however, in principle, we believe that the effort needs to be made toward attaining such a goal.

While progress will be made through waste management strategies that focus on the three "R's" -- reduce, recycle and reuse -- we believe that the other two "R's" -- recover and retention -- will continue to have an important part to play.

When the options for reducing, reusing and recycling have been exhausted for specific wastes, incineration opportunities need to receive more attention. Modern incinerator designs ensure complete combustion and cleanup of the flue gases. By recovering the energy content of wastes, electricity can be generated or heat provided to neighbouring communities.

Even with these steps there will be a continuing need for environmentally safe waste disposal sites. Furthermore, many of the sites that are currently in use are nearing capacity. Individual jurisdictions in Canada will need to quickly develop efficient environmental assessment and approval processes to meet this need.

A word on plastics is important, as this has become a significant environmental and waste management issue in Canada. As a major producer of polyethylene and polyvinyl chloride in Canada, Imperial believes that Canadians need to be better informed about the pros and cons of plastics in the environment, since plastics can help to contribute to waste management solutions. Plastics comprise about seven percent of municipal solid waste which can be reduced by thinner packaging films, by reuse and recycle and by safely incinerating and recapturing the heat which is equivalent to that of heavy fuel oil. Of concern is the potential development of legislation to limit the use of plastics without a full and informed public debate on the issue.

Imperial is contributing to public understanding of the issue of plastics in the environment by supporting industry-wide public education initiatives, participating in recycling projects, fostering responsible product use and disposal and contributing to federal and provincial government consultations.

D. POTENTIAL CLIMATE CHANGE

The potential for climate change and global warming as a result of the buildup of carbon dioxide and other greenhouse gases in the atmosphere is a serious and complex international issue. Imperial's Discussion Paper on Potential Global Warming (March 1990) calls for urgent steps to improve scientific knowledge to better define the problem and to guide effective solutions and to assess the costs and benefits of actions that could be taken by Canada and the world.

Imperial has committed to its own seven-point work program in 1990 to contribute to this knowledge base.

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INSTRUMENTS OF CHANGE

Much of the preceding has dealt with the questions of what Canada's environmental goals should be and how they should be determined. Imperial believes governments have the lead responsibility to define the environmental quality society seeks and to determine priorities and inevitable trade-offs. However, this needs to be carried out in a way that engages key participants and seeks their views.

The question of how these environmental goals should be met is a different one. We believe that the private sector -- industry and consumers -- is in the best position to take the lead role in developing the means since it is this sector that will be called upon to modify and adapt product selection, production processes and consumption patterns.

Depending on the environmental issue, for each industry, meeting these goals will require different trade-offs, challenges, cost and competitiveness implications and technological development opportunities.

It will be increasingly important that these actions be aimed at meeting environmental goals while preserving and enhancing overall economic efficiency. This is important to protect the ability of our economy to create the wealth that provides the resources to protect the environment.

The traditional command and control approach to achieve environmental goals -- the setting of detailed performance standards based on current technological capability -- potentially fails in many areas to address these concerns.

Nowhere is there a better example than in the case of potential global warming. A comprehensive approach to this challenge should include assessments of the impact of the problem, the relative cost-effectiveness of measures to reduce different greenhouse gases, the comparative effectiveness of emission reduction strategies versus emission capturing and sequestering strategies and the relative merits of a range of possible actions.

To address all of these variables and to do so on a global basis through detailed regulatory regimes implies a truly massive intrusion into the working of the economy. Given the criticality of energy use in the Canadian economy and our way of life, the potential for major economic and social disruption must be considered high.

Alternately, Imperial encourages focussing on establishing an environmental goal and leaving the questions of how to meet it to those responsible for meeting it. This implies approaches that rely as much as possible on the market means to provide economically appropriate information and incentives. Such approaches offer much better potential to fully engage the resources and imagination of the private sector to develop new

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technologies, to identify and capture efficiencies and to redesign and realign production processes and consumption patterns.

A growing body of literature and practical experience, notably in the United States, attest to the benefits of more flexible, market-oriented approaches -- such as tradeable emission rights -- to achieve environmental goals.

Imperial strongly supports the intent of the federal government, as expressed in the "Green Plan", to initiate a detailed discussion of the advantages and disadvantages of various economic instruments for pursuing environmental objectives, including the possible stimulation of applied research into their application.

As a contribution to this national effort, Imperial is committed to sponsoring a discussion paper in 1990 on how economic instruments can be applied to major environmental challenges.

In the meantime, Imperial strongly recommends against measures such as special taxes that only indirectly recognize environmental costs in the market. General taxes such as "blanket energy taxes" or some form of "green tax" do not focus on specific environmental ends, and potentially interfere with, rather than promote, economic efficiency. Carbon taxes, while arguably more focussed, have further drawbacks. They are

regressive and carry substantially different regional impacts. In particular, unless coordinated with similar taxes internationally, taxes at a level that would likely have a material effect on carbon use could have serious implications for the international competitiveness of Canadian industry.

In addition to the guiding principles and other considerations outlined above, Imperial's commitments that can contribute to these recommended approaches are also indicated.

1. Thoroughly explore innovative mechanisms that go beyond traditional command and control approaches to achieve environmental goals. These should include more imaginative, market-driven options that unleash the full potential of the private sector to achieve goals in more cost-effective and timely ways.

Imperial's commitment: to study instruments of change that will further Canadian endeavours to meet environmental challenges, and undertake a discussion paper on this topic, for release by the end of the year.

2. Thoroughly set out, and provide to the public for informed reaction, the economic and social consequences to Canada of international protocols on key environmental challenges, prior to making commitments. In addition, consideration should be given to including key Canadian economic activities in negotiating issues for such protocols where the impacts on Canada's economy are significant.

RECOMMENDATIONS AND COMMITMENTS

In developing the action plans that will be included in the forthcoming "Green Plan: A National Challenge", the federal government should consider the following specific recommendations in addition to the guiding principles and other considerations outlined above. Imperial's commitments that can contribute to these recommended approaches are also indicated.

1. Thoroughly explore innovative mechanisms that go beyond traditional command and control approaches to achieve environmental goals. These should include more imaginative, market-driven options that unleash the full potential of the private sector to achieve goals in more cost-effective and timely ways.

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Imperial's commitment: To provide the company's unique perspective, together with information and analysis from its own operations and activities, that can support federal government efforts.

3. Extend and expand public consultations on potential global warming. The seriousness of the issue and the potential costs are so significant as to demand an unprecedented amount of public consultation.

Imperial's commitment: As outlined in A Discussion Paper on Potential Global Warming, Imperial has undertaken the following seven-point workplan to:

- develop an inventory of greenhouse gases that are emitted in its operations and identify feasible opportunities and costs to reduce these emissions;
- determine the technical and economic potential for additional energy efficiency opportunities in all of its operations, with an eye to reducing carbon dioxide emissions;
- determine, in dialogue with governments and the scientific community, how its extensive research capabilities and facilities and external research programs can be utilized to address potential global

warming. The primary context will be energy usage, considering both input and output implications;

- determine the technical and economic potential for carbon dioxide "sinks," or mechanisms to remove carbon dioxide from the atmosphere, such as underground injection into oil-bearing reservoirs to support enhanced oil recovery operations, or into deep saline aquifers for disposal purposes;
- develop "life cycle" assessments of greenhouse gas emissions for fossil fuels and their alternatives in various end-uses;
- carry out a comprehensive assessment of the technical and economic potential for fuel switching with emphasis on the transportation sector, including an assessment of the full range of environmental consequences;
- assess the macroeconomic consequences to Canada of options being contemplated by governments to reduce carbon dioxide emissions, such as carbon or fuel taxes.

4. Reallocate human and financial resources of federal research-related or grant-giving bodies to support increased scientific research pertaining to key environmental challenges.

Imperial's commitment: To collaborate with governments and the scientific community to determine how Imperial's research and financial capabilities can best contribute.

5. Seek overall national environmental quality standards, while allowing for distinctive regional plans that reflect unique scientific, cost and benefit considerations.

Imperial's commitment: To undertake a discussion paper on air quality in Canada for release by the end of the year, that addresses interrelationships and interdependencies between issues, tools to understand trade-offs, and steps to sort out priorities. Also, Imperial has expanded its inventory work on greenhouse gas emissions to include other emissions into the atmosphere -- carbon monoxide, nitrogen oxides, volatile organic compounds, sulphur dioxide, particulates and benzene.

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